

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
SHERMAN DIVISION**

AMERICAN PATENTS LLC,

Plaintiff,

v.

HISENSE CO. LTD., HISENSE
ELECTRIC CO., LTD., GUIYANG
HISENSE ELECTRONICS CO., LTD.,
HISENSE INTERNATIONAL (HONG
KONG) AMERICA INVESTMENT CO.
LTD., TOP VICTORY ELECTRONICS
(TAIWAN) CO. LTD., TPV
ELECTRONICS (FUJIAN) CO. LTD., TPV
TECHNOLOGY LTD., BEST BUY CO.,
INC. D/B/A INSIGNIA PRODUCTS,
SHARP CORPORATION,

Defendants.

CIVIL ACTION NO. 4:18-cv-768

ORIGINAL COMPLAINT FOR
PATENT INFRINGEMENT

JURY TRIAL DEMANDED

ORIGINAL COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff American Patents LLC (“American Patents” or “Plaintiff”) files this original complaint against Defendants Hisense Co. Ltd., Hisense Electric Co., Ltd., Hisense International (Hong Kong) America Investment Co. Ltd., Top Victory Electronics (Taiwan) Co. Ltd., TPV Electronics (Fujian) Co. Ltd., TPV Technology Ltd., Best Buy Co., Inc. d/b/a Insignia Products, and Sharp Corporation (“Defendants”), alleging, based on its own knowledge as to itself and its own actions and based on information and belief as to all other matters, as follows:

PARTIES

1. American Patents is a limited liability company formed under the laws of the State of Texas, with its principal place of business at 2325 Oak Alley, Tyler, Texas, 75703.

2. Hisense Co. Ltd., is a corporation duly organized and existing under the laws of the People's Republic of China, having an address of Hisense Tower 17, Donghaixi Road, Qingdao 266071, China.

3. Hisense Electric Co., Ltd., is a corporation duly organized and existing under the laws of the People's Republic of China, having an address of Hisense Tower 17, Donghaixi Road, Qingdao 266071, China.

4. Guiyang Hisense Electronics Co., Ltd., is a corporation duly organized and existing under the laws of the People's Republic of China, having an address of No. 39, Honghe Road, Economic Technology Development Zone, Guiyang, Guizhou 550006.

5. Hisense International (Hong Kong) America Investment Co. Ltd., is a corporation duly organized and existing under the laws of Hong Kong, having an address of Room 3101-05, Singa Commercial Centre, No. 148 Connaught Road West, Sheung Wan, Hong Kong.

6. The Defendants identified in paragraphs 2-5 above (collectively, "Hisense") are an interrelated group of companies which together comprise one of the world's largest manufacturers of televisions and one of the leading sellers of televisions in the United States, including the Sharp brand made for Best Buy and the Hisense brand.

7. The Hisense defendants named above are part of the same corporate structure and distribution chain for the making, importing, offering to sell, selling, and using of the accused devices in the United States, including in the State of Texas generally and this judicial district in particular.

8. The Hisense defendants named above share the same management, common ownership, advertising platforms, facilities, distribution chains and platforms, and accused product lines and products involving related technologies.

9. Thus, the Hisense defendants named above operate as a unitary business venture and are jointly and severally liable for the acts of patent infringement alleged herein.

10. Top Victory Electronics (Taiwan) Co. Ltd. is a corporation duly organized and existing under the laws of Taiwan, having an address of 10F, No. 230 Liancheng Road, Zhonghe District, New Taipei, 23553 Taiwan.

11. TPV Electronics (Fujian) Co. Ltd. is a corporation duly organized and existing under the laws of the People's Republic of China, having an address of Shangzheng Yuanhong Road, Fuqing City, Fujian Province, China.

12. TPV Technology Ltd. is a corporation organized under the laws of Bermuda, having an address of Units 1208-16, 12/F, C-Bons International Center, 108 Wai Yip Street, Kwun Tong, Kowloon, Hong Kong.

13. The Defendants identified in paragraphs 10-12 above (collectively, "TPV") are an interrelated group of companies which together comprise one of the world's largest manufacturers of televisions, including the Insignia and Vizio brands.

14. The TPV defendants named above are part of the same corporate structure and distribution chain for the making, importing, offering to sell, selling, and using of the accused devices in the United States, including in the State of Texas generally and this judicial district in particular.

15. The TPV defendants named above share the same management, common ownership, advertising platforms, facilities, distribution chains and platforms, and accused product lines and products involving related technologies.

16. Thus, the TPV defendants named above operate as a unitary business venture and are jointly and severally liable for the acts of patent infringement alleged herein.

17. Best Buy Co., Inc. is a Minnesota Corporation, with an address of 7601 Penn Ave., South Richfield, Minnesota, 55423. Best Buy is one of the leading sellers of televisions in the United States, including the Sharp brand made for Best Buy, the Hisense brand, the Vizio brand, and the Insignia brand.

18. Best Buy does business as Insignia Products. Best Buy owns the Insignia brand, which is exclusively sold through retail channels selected by Best Buy.

19. Sharp Corporation is a corporation organized and existing under the laws of Japan, with an address at 1 Takumi-cho, Sakai-ku, Sakai City, Osaka 590-8522, Japan.

20. Best Buy directs, contracts with, and/or encourages manufacturers (e.g., TPV, Hisense, TCL) to make, use, offer to sell, sell or import Insignia-brand accused products and/or accused products for Best Buy bearing other brands.

21. Best Buy directs, contracts with, and/or encourages brand owners (e.g., Sharp) to make, use, offer to sell, sell or import accused products for Best Buy under non-Insignia brands.

22. Sharp directs, contracts with, and/or encourages manufacturers (e.g., Hisense) to make, use, offer to sell, sell or import accused products under the Sharp brand for Best Buy.

23. The parties to this action are properly joined under 35 U.S.C. § 299 because the right to relief asserted against defendants jointly and severally arises out of the same series of transactions or occurrences relating to the making and using of the same products or processes, including televisions and related processes bearing the Insignia brand or that are otherwise made for Best Buy. Additionally, questions of fact common to all defendants will arise in this action.

JURISDICTION AND VENUE

24. This is an action for infringement of United States patents arising under 35 U.S.C. §§ 271, 281, and 284–85, among others. This Court has subject matter jurisdiction of the action under 28 U.S.C. § 1331 and § 1338(a).

25. This Court has personal jurisdiction over the Defendants pursuant to due process and/or the Texas Long Arm Statute because, *inter alia*, (i) the Defendants have done and continue to do business in Texas; (ii) the Defendants have committed and continue to commit acts of patent infringement in the State of Texas, including making, using, offering to sell, and/or selling accused products in Texas, and/or importing accused products into Texas, including by Internet sales and sales via retail and wholesale stores, inducing others to commit acts of patent infringement in Texas, and/or committing a least a portion of any other infringements alleged herein; and (iii) Defendant Best Buy Co., Inc. is registered to do business in Texas. In addition, or in the alternative, this Court has personal jurisdiction over the Defendants pursuant to Fed. R. Civ. P. 4(k)(2).

26. Venue is proper in this district pursuant to 28 U.S.C. §§ 1391(b), 1391(c), and 1400(b) because (i) Defendants have done and continue to do business in this district; (ii) Defendants have committed and continue to commit acts of patent infringement in this district, including making, using, offering to sell, and/or selling accused products in this district, and/or importing accused products into this district, including by internet sales and sales via retail and wholesale stores, and/or inducing others to commit acts of patent infringement in this district; (iii) TPV, Hisense, and Sharp Corporation are foreign entities; and (iv) Best Buy has regular and established places of business in this district at least at 2800 N Central Expy, Plano, TX 75074 and at 3333 Preston Rd #00200, Frisco, TX 75034.

27. Venue is proper as to TPV, Hisense, and Sharp Corporation, which are organized under the laws of the People's Republic of China, Bermuda, Hong Kong, Japan, and/or Taiwan. 28 U.S.C. § 1391(c)(3) provides that "a defendant not resident in the United States may be sued in any judicial district, and the joinder of such a defendant shall be disregarded in determining where the action may be brought with respect to other defendants."

BACKGROUND

28. The patents-in-suit generally pertain to communications networks and other technology used in "smart" devices such as smartphones. The technology disclosed by the patents was developed by personnel at AT&T Mobility and Georgia Institute of Technology.

29. AT&T Mobility is the second largest provider of wireless services in the United States. AT&T Mobility and its parent company, AT&T Inc. have a rich history of invention and innovation. These companies can trace their roots back to the invention of the first telephone by Alexander Graham Bell in the 1870's. Since the time of Alexander Bell, AT&T (or Ma Bell as it was once called) has been a leader in the field of communications. In the 1890's AT&T built the first long distance telephone network in the United States. AT&T was instrumental throughout the 1900's in developing and innovating telephone networks. In the early 1980's, an AT&T company created the first cellular network in the United States. In the 1990s and 2000s, AT&T was at the forefront of the wireless revolution. In 2007 as part of a partnership with Apple, AT&T exclusively sold the original iPhone to its customers.

30. Georgia Institute of Technology ("Georgia Tech") is a leading public research university located in Atlanta, Georgia. Founded in 1885, Georgia Tech is often ranked as one of the top ten public universities in the United States. Three of the patents-in-suit were developed by a professor and a graduate student in Georgia Tech's Electrical and Computer Engineering

department. This undergraduate and graduate programs of this department are often ranked in the top five of their respective categories.

COUNT I

DIRECT INFRINGEMENT OF U.S. PATENT NO. 7,088,782

31. On August 8, 2006, United States Patent No. 7,088,782 (“the ‘782 Patent”) was duly and legally issued by the United States Patent and Trademark Office for an invention entitled “Time And Frequency Synchronization In Multi-Input, Multi-Output (MIMO) Systems.”

32. American Patents is the owner of the ‘782 Patent, with all substantive rights in and to that patent, including the sole and exclusive right to prosecute this action and enforce the ‘782 Patent against infringers, and to collect damages for all relevant times.

33. Defendants made, had made, used, imported, provided, supplied, distributed, sold, and/or offered for sale products and/or systems including, for example, their Vizio brand D-Series, Insignia brand FireTV, Sharp brand 55” Class 4K HDR Smart TV, or Hisense brand H9E families of products that include 802.11ac capabilities (“accused products”):




Source: <https://www.vizio.com/d-series>

Key Specs

Class Size	60"
Screen Size (Diag.)	60.00" / 1524.00 mm
Smart Platform	VIZIO SmartCast™ with Chromecast built-in
High Dynamic Range	HDR10 & HLG
Resolution	Ultra HD - 3840 x 2160
UHD Upscale Engine	Spatial Scaling Engine™
Display Processor	V8 Octa-Core Processor
Backlight Type	Full Array LED
Built-in Wi-Fi	802.11ac Dual Band

Source: <https://www.vizio.com/d60f3.html>



Insignia - 43" Class – LED - 2160p – Smart - 4K UHD TV with HDR – Fire TV Edition


Model: NS-43DF710NA19

Insignia 4K UHD Fire TV Edition is a new generation of smart TVs featuring the Fire TV experience built-in and including a Voice Remote with Alexa. With true-to-life 4K Ultra HD picture quality and access to all the movies and TV shows you love, Insignia Fire TV Edition delivers a superior TV experience that gets smarter every day. The Voice Remote with Alexa lets you do everything you'd expect from a remote—plus, easily launch apps, search for TV shows, play music, switch inputs, control smart home devices and more, using just your voice.


★★★★☆ 3 (1 reviews)

\$329.99

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Source: <https://www.insigniaproducts.com/pdp/NS-43DF710NA19/6245701>



Source: photo of product



MODEL: DHUR-AZ68

Product Introduction

DHUR-AZ68 is an 802.11 a/b/g/n/ac WLAN/Bluetooth 5.0 combo module with USB interface based on MediaTek MT7668AUN chipset solution.

1-1. Features

- Dual band 2T2R support, IEEE 802.11a/b/g/n/ac + Bluetooth 5.0
- Support 20MHz, 40MHz and 80MHz bandwidth
- Support MU-MIMO RX, DBDC, STBC, LDPC, TX Beamformer, Rx Beamformee
- 2 on-board printed Wi-Fi antennas and 1 BT external antenna
- PCB 4 Layers with 46.5 x 40 x 1.0 mm³

Source: <https://fccid.io/NKR-DHURAZ68/Users-Manual/Users-Manual-3842310>

Sharp 55" Class 4K HDR Smart TV - LC-55P6050U

by Sharp | Item # 980083579 | Model # LC-55P6050U | ★★★★★ 4.4 (96) Write a review Ask a question



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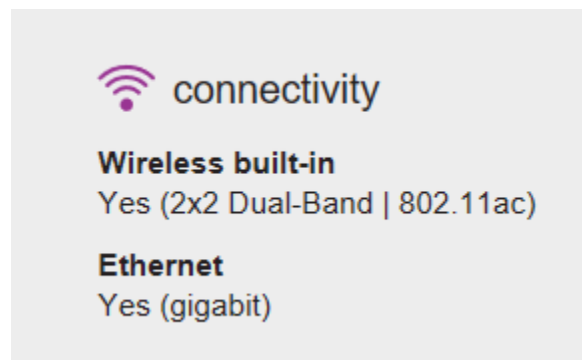
About this item

- 4K UHD Resolution
- HDR
- Motion Rate 120 AquoDimming™
- UHD Upscaler
- Built-in Apps
- dbx-tv® Award-Winning Audio Technology
- App Store
- 4K Media Player & Receiver
- 2x2 Dual-Band Wi-Fi 802.11ac

Source: https://www.samsclub.com/sams/55-uhd-smart-120hz-3-hdmi-wifi/prod22021839.ip?xid=plp_product_1_1



Source: <https://www.hisense-usa.com/electronics/tv/65h9e-plus>



Source: <https://www.hisense-usa.com/electronics/tv/65h9e-plus>

34. By doing so, Defendants have directly infringed (literally and/or under the doctrine of equivalents) at least Claim 30 of the '782 Patent. Defendants' infringement in this regard is ongoing.

35. Defendants have infringed the '782 Patent by making, having made, using, importing, providing, supplying, distributing, selling or offering for sale systems utilizing a method for synchronizing a Multi-Input Multi-Output (MIMO) Orthogonal Frequency Division Multiplexing (OFDM) system in time and frequency domains.

36. The methods practiced by the accused products include producing a frame of data comprising a training symbol that includes a synchronization component that aids in synchronization, a plurality of data symbols, and a plurality of cyclic prefixes.

37. The methods practiced by the accused products include transmitting the frame over a channel.

38. The methods practiced by the accused products include receiving the transmitted frame.

39. The methods practiced by the accused products include demodulating the received frame.

40. The methods practiced by the accused products include synchronizing the received demodulated frame to the transmitted frame such that the data symbols are synchronized in the time domain and frequency domain.

Key Specs

Class Size	60"
Screen Size (Diag.)	60.00" / 1524.00 mm
Smart Platform	VIZIO SmartCast™ with Chromecast built-in
High Dynamic Range	HDR10 & HLG
Resolution	Ultra HD - 3840 x 2160
UHD Upscale Engine	Spatial Scaling Engine™
Display Processor	V8 Octa-Core Processor
Backlight Type	Full Array LED
Built-in Wi-Fi	802.11ac Dual Band

Source: <https://www.vizio.com/d60f3.html>



Source: photo of product



MODEL: DHUR-AZ68

Product Introduction

DHUR-AZ68 is an 802.11 a/b/g/n/ac WLAN/Bluetooth 5.0 combo module with USB interface based on MediaTek MT7668AUN chipset solution.

1-1. Features

- Dual band 2T2R support, IEEE 802.11a/b/g/n/ac + Bluetooth 5.0
- Support 20MHz, 40MHz and 80MHz bandwidth
- Support MU-MIMO RX, DBDC, STBC, LDPC, TX Beamformer, Rx Beamformee
- 2 on-board printed Wi-Fi antennas and 1 BT external antenna
- PCB 4 Layers with 46.5 x 40 x 1.0 mm³

Source: <https://fccid.io/NKR-DHURAZ68/Users-Manual/Users-Manual-3842310>

About this item

- 4K UHD Resolution
- HDR
- Motion Rate 120 AquoDimming™
- UHD Upscaler
- Built-in Apps
- dbx-tv® Award-Winning Audio Technology
- App Store
- 4K Media Player & Receiver
- 2x2 Dual-Band Wi-Fi 802.11ac

Source: https://www.samsclub.com/sams/55-uhd-smart-120hz-3-hdmi-wifi/prod22021839.ip?xid=plp_product_1_1



Source: <https://www.hisense-usa.com/electronics/tv/65h9e-plus>

41. The methods practiced by the accused products include wherein the synchronizing in the time domain comprises coarse time synchronizing and fine time synchronizing.

42. Defendants have had knowledge of the '782 Patent at least as of the date when it was notified of the filing of this action.

43. American Patents has been damaged as a result of the infringing conduct by Defendants alleged above. Thus, Defendants are liable to American Patents in an amount that adequately compensates it for such infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

44. American Patents and/or its predecessors-in-interest have satisfied all statutory obligations required to collect pre-filing damages for the full period allowed by law for infringement of the '782 Patent.

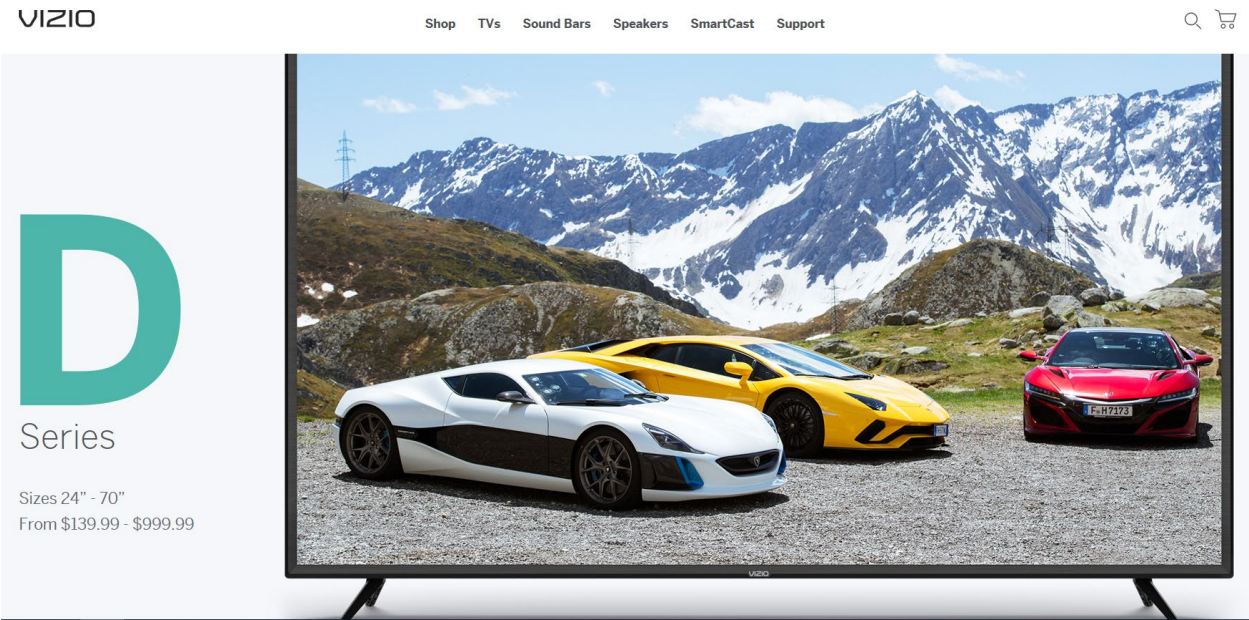
COUNT II

DIRECT INFRINGEMENT OF U.S. PATENT NO. 7,310,304

45. On December 18, 2007, United States Patent No. 7,310,304 ("the '304 Patent") was duly and legally issued by the United States Patent and Trademark Office for an invention entitled "Estimating Channel Parameters in Multi-Input, Multi-Output (MIMO) Systems."

46. American Patents is the owner of the '304 Patent, with all substantive rights in and to that patent, including the sole and exclusive right to prosecute this action and enforce the '304 Patent against infringers, and to collect damages for all relevant times.

47. Defendants made, had made, used, imported, provided, supplied, distributed, sold, and/or offered for sale products and/or systems including, for example, their Vizio brand D-Series, Insignia brand FireTV, Sharp brand 55" Class 4K HDR Smart TV, or Hisense brand H9E families of products that include 802.11ac capabilities ("accused products"):




Source: <https://www.vizio.com/d-series>

Key Specs

Class Size	60"
Screen Size (Diag.)	60.00" / 1524.00 mm
Smart Platform	VIZIO SmartCast™ with Chromecast built-in
High Dynamic Range	HDR10 & HLG
Resolution	Ultra HD - 3840 x 2160
UHD Upscale Engine	Spatial Scaling Engine™
Display Processor	V8 Octa-Core Processor
Backlight Type	Full Array LED
Built-in Wi-Fi	802.11ac Dual Band

Source: <https://www.vizio.com/d60f3.html>




Insignia - 43" Class – LED - 2160p – Smart - 4K UHD TV with HDR – Fire TV Edition

Model: NS-43DF710NA19


Insignia 4K UHD Fire TV Edition is a new generation of smart TVs featuring the Fire TV experience built-in and including a Voice Remote with Alexa. With true-to-life 4K Ultra HD picture quality and access to all the movies and TV shows you love, Insignia Fire TV Edition delivers a superior TV experience that gets smarter every day. The Voice Remote with Alexa lets you do everything you'd expect from a remote—plus, easily launch apps, search for TV shows, play music, switch inputs, control smart home devices and more, using just your voice.

★★★★☆ 3 (1 reviews)

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Source: <https://www.insigniaproducts.com/pdp/NS-43DF710NA19/6245701>



Source: photo of product



MODEL: DHUR-AZ68

Product Introduction

DHUR-AZ68 is an 802.11 a/b/g/n/ac WLAN/Bluetooth 5.0 combo module with USB interface based on MediaTek MT7668AUN chipset solution.

1-1. Features

- Dual band 2T2R support, IEEE 802.11a/b/g/n/ac + Bluetooth 5.0
- Support 20MHz, 40MHz and 80MHz bandwidth
- Support MU-MIMO RX, DBDC, STBC, LDPC, TX Beamformer, Rx Beamformee
- 2 on-board printed Wi-Fi antennas and 1 BT external antenna
- PCB 4 Layers with 46.5 x 40 x 1.0 mm³

Source: <https://fccid.io/NKR-DHURAZ68/Users-Manual/Users-Manual-3842310>

Sharp 55" Class 4K HDR Smart TV - LC-55P6050U

by Sharp | Item # 980083579 | Model # LC-55P6050U | ★★★★★ 4.4 (96) | [Write a review](#) | [Ask a question](#)



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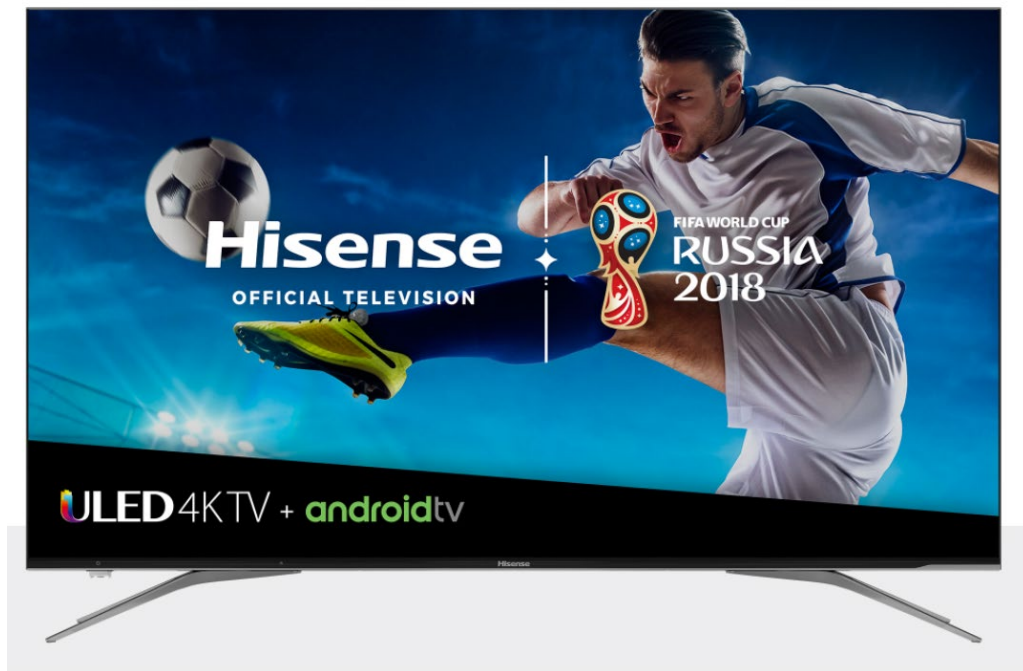
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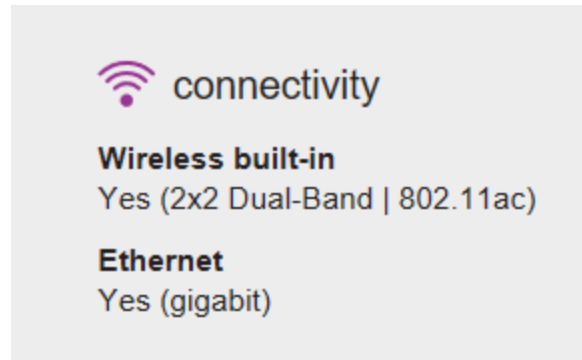
About this item

- 4K UHD Resolution
- HDR
- Motion Rate 120 AquoDimming™
- UHD Upscaler
- Built-in Apps
- dbx-tv® Award-Winning Audio Technology
- App Store
- 4K Media Player & Receiver
- 2x2 Dual-Band Wi-Fi 802.11ac

Source: https://www.samsclub.com/sams/55-uhd-smart-120hz-3-hdmi-wifi/prod22021839.ip?xid=plp_product_1_1



Source: <https://www.hisense-usa.com/electronics/tv/65h9e-plus>



Source: <https://www.hisense-usa.com/electronics/tv/65h9e-plus>

48. By doing so, Defendants have directly infringed (literally and/or under the doctrine of equivalents) at least Claim 1 of the '304 Patent. Defendants' infringement in this regard is ongoing.

49. Defendants have infringed the '304 Patent by making, having made, using, importing, providing, supplying, distributing, selling or offering for sale products including an Orthogonal Frequency Division Multiplexing (OFDM) transmitter.

50. The accused products include an encoder configured to process data to be transmitted within an OFDM system, the encoder further configured to separate the data onto one or more transmit diversity branches (TDBs).

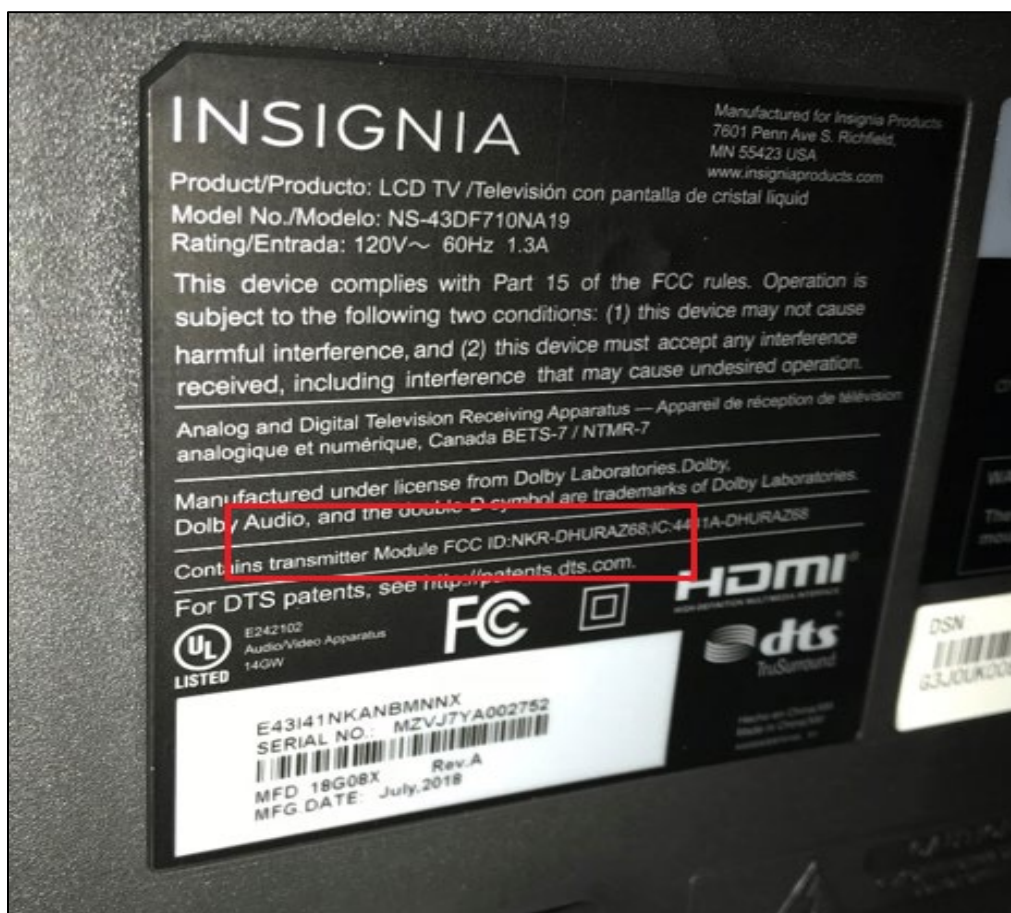
51. The accused products include one or more OFDM modulators, each OFDM modulator connected to a respective TDB, each OFDM modulator configured to produce a frame including a plurality of data symbols, a training structure, and cyclic prefixes inserted among the data symbols.

52. The accused products include one or more transmitting antennas in communication with the one or more OFDM modulators, respectively, each transmitting antenna configured to transmit the respective frame over a channel.

Key Specs

Class Size	60"
Screen Size (Diag.)	60.00" / 1524.00 mm
Smart Platform	VIZIO SmartCast™ with Chromecast built-in
High Dynamic Range	HDR10 & HLG
Resolution	Ultra HD - 3840 x 2160
UHD Upscale Engine	Spatial Scaling Engine™
Display Processor	V8 Octa-Core Processor
Backlight Type	Full Array LED
Built-in Wi-Fi	802.11ac Dual Band

Source: <https://www.vizio.com/d60f3.html>



Source: photo of product



MODEL: DHUR-AZ68

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- PCB 4 Layers with 46.5 x 40 x 1.0 mm³

Source: <https://fccid.io/NKR-DHURAZ68/Users-Manual/Users-Manual-3842310>

About this item

- 4K UHD Resolution
- HDR
- Motion Rate 120 AquoDimming™
- UHD Upscaler
- Built-in Apps
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- App Store
- 4K Media Player & Receiver
- 2x2 Dual-Band Wi-Fi 802.11ac

Source: <https://www.samsclub.com/sams/55-uhd-smart-120hz-3-hdmi->

[wifi/prod22021839.ip?xid=plp_product_1_1](https://www.samsclub.com/sams/55-uhd-smart-120hz-3-hdmi-wifi/prod22021839.ip?xid=plp_product_1_1)



Source: <https://www.hisense-usa.com/electronics/tv/65h9e-plus>

53. The accused products include wherein the training structure of each frame includes a predetermined signal transmission matrix at a respective sub-channel, each training structure adjusted to have a substantially constant amplitude in a time domain, and the cyclic prefixes are further inserted within the training symbol, and wherein the cyclic prefixes within the training symbol are longer than the cyclic prefixes among the data symbols, thereby countering an extended channel impulse response and improving synchronization performance.

54. Defendants have had knowledge of the '304 Patent at least as of the date when it was notified of the filing of this action.

55. Sharp has had knowledge of the '304 Patent at least as of November 14, 2008, when U.S. Patent Application Publication No. US2002/0181390, the application leading to the '304 Patent, was cited by the examiner and used in multiple prior art rejections during the prosecution of U.S. Patent No. 7,602,697, which was assigned to Sharp Laboratories of America, Inc. Sharp employee John M. Kowalski, who is listed as inventor on U.S. Patent No. 7,602,697, and others involved in the prosecution of the patent, including David C. Ripma, have had knowledge of the '049 Patent at least as of November 14, 2008.

56. American Patents has been damaged as a result of the infringing conduct by Defendants alleged above. Thus, Defendants are liable to American Patents in an amount that

adequately compensates it for such infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

57. American Patents and/or its predecessors-in-interest have satisfied all statutory obligations required to collect pre-filing damages for the full period allowed by law for infringement of the ‘304 Patent.

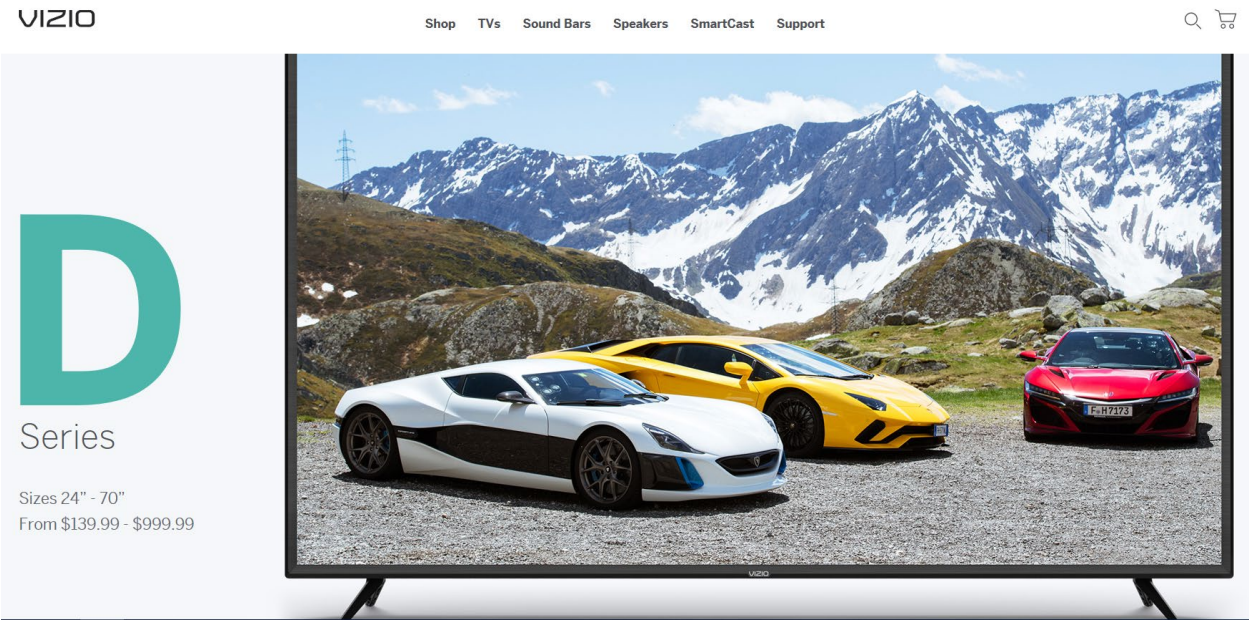
COUNT III

DIRECT INFRINGEMENT OF U.S. PATENT NO. 7,706,458

58. On April 27, 2010, United States Patent No. 7,706,458 (“the ‘458 Patent”) was duly and legally issued by the United States Patent and Trademark Office for an invention entitled “Time And Frequency Synchronization In Multi-Input, Multi-Output (MIMO) Systems.”

59. American Patents is the owner of the ‘458 Patent, with all substantive rights in and to that patent, including the sole and exclusive right to prosecute this action and enforce the ‘458 Patent against infringers, and to collect damages for all relevant times.

60. Defendants made, had made, used, imported, provided, supplied, distributed, sold, and/or offered for sale products and/or systems including, for example, their Vizio brand D-Series, Insignia brand FireTV, Sharp brand 55” Class 4K HDR Smart TV, or Hisense brand H9E families of products that include 802.11ac capabilities (“accused products”):




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Source: <https://www.vizio.com/d60f3.html>



Insignia - 43" Class – LED - 2160p – Smart - 4K UHD TV with HDR – Fire TV Edition

Model: NS-43DF710NA19


Insignia 4K UHD Fire TV Edition is a new generation of smart TVs featuring the Fire TV experience built-in and including a Voice Remote with Alexa. With true-to-life 4K Ultra HD picture quality and access to all the movies and TV shows you love, Insignia Fire TV Edition delivers a superior TV experience that gets smarter every day. The Voice Remote with Alexa lets you do everything you'd expect from a remote—plus, easily launch apps, search for TV shows, play music, switch inputs, control smart home devices and more, using just your voice.

★★★★☆ 3 (1 reviews)

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* Non US customer - check your local stores for pricing and availability



Source: <https://www.insigniaproducts.com/pdp/NS-43DF710NA19/6245701>



Source: photo of product



MODEL: DHUR-AZ68

Product Introduction

DHUR-AZ68 is an 802.11 a/b/g/n/ac WLAN/Bluetooth 5.0 combo module with USB interface based on MediaTek MT7668AUN chipset solution.

1-1. Features

- Dual band 2T2R support, IEEE 802.11a/b/g/n/ac + Bluetooth 5.0
- Support 20MHz, 40MHz and 80MHz bandwidth
- Support MU-MIMO RX, DBDC, STBC, LDPC, TX Beamformer, Rx Beamformee
- 2 on-board printed Wi-Fi antennas and 1 BT external antenna
- PCB 4 Layers with 46.5 x 40 x 1.0 mm³

Source: <https://fccid.io/NKR-DHURAZ68/Users-Manual/Users-Manual-3842310>

Sharp 55" Class 4K HDR Smart TV - LC-55P6050U

by Sharp | Item # 980083579 | Model # LC-55P6050U | ★★★★★ 4.4 (96) | [Write a review](#) | [Ask a question](#)



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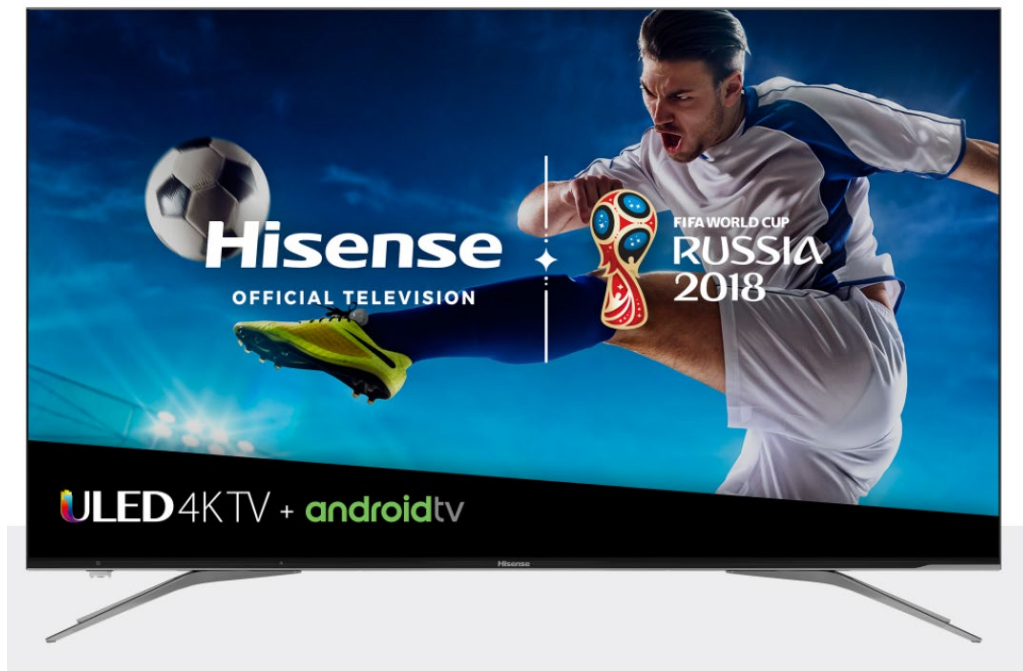
Add to list

Source: https://www.samsclub.com/sams/55-uhd-smart-120hz-3-hdmi-wifi/prod22021839.ip?xid=plp_product_1_1

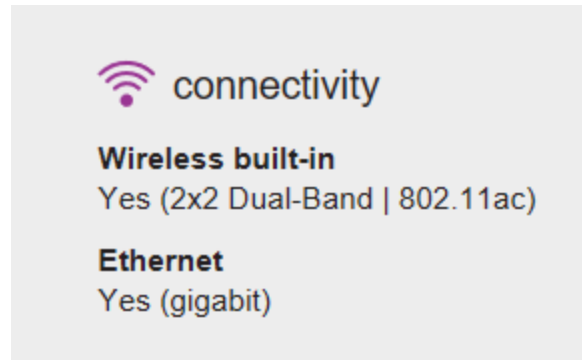
About this item

- 4K UHD Resolution
- HDR
- Motion Rate 120 AquoDimming™
- UHD Upscaler
- Built-in Apps
- dbx-tv® Award-Winning Audio Technology
- App Store
- 4K Media Player & Receiver
- 2x2 Dual-Band Wi-Fi 802.11ac

Source: https://www.samsclub.com/sams/55-uhd-smart-120hz-3-hdmi-wifi/prod22021839.ip?xid=plp_product_1_1



Source: <https://www.hisense-usa.com/electronics/tv/65h9e-plus>



Source: <https://www.hisense-usa.com/electronics/tv/65h9e-plus>

61. By doing so, Defendants have directly infringed (literally and/or under the doctrine of equivalents) at least Claim 1 of the ‘458 Patent. Defendants’ infringement in this regard is ongoing.

62. Defendants have infringed the ‘458 Patent by making, having made, using, importing, providing, supplying, distributing, selling or offering for sale products including an apparatus for synchronizing a communication system.

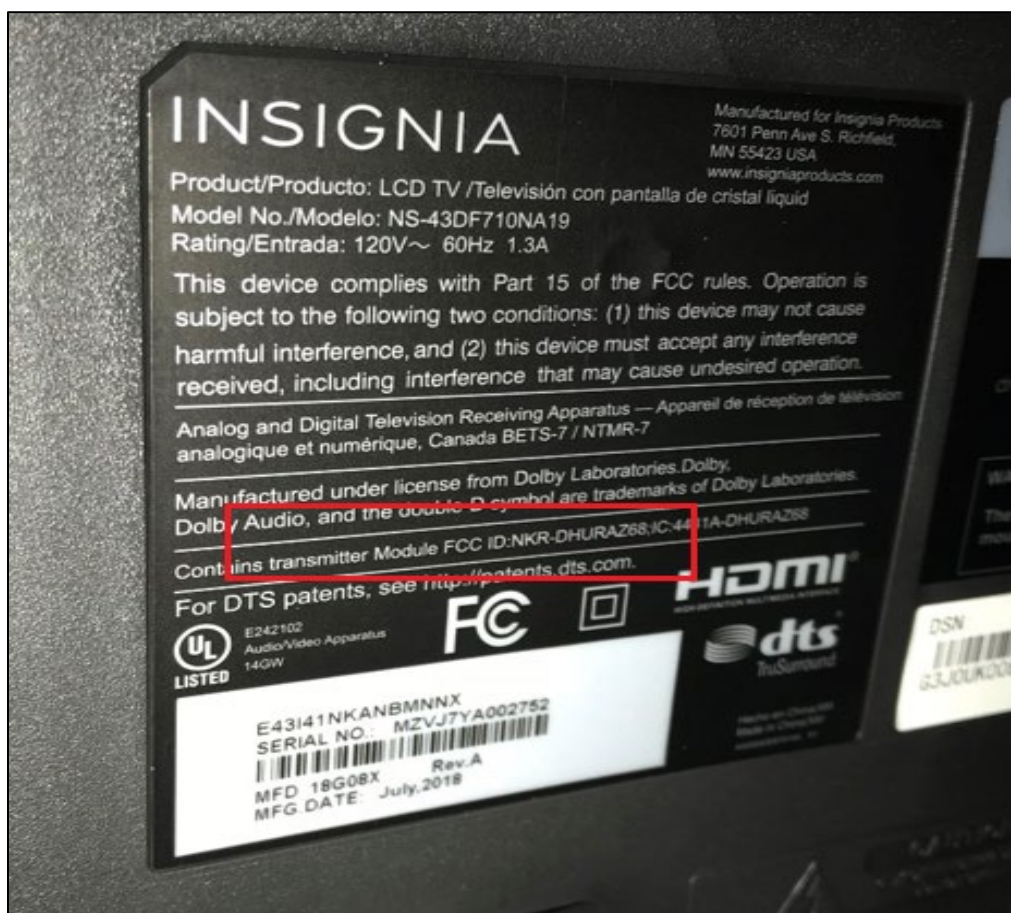
63. The accused products include a number (Q) of Orthogonal Frequency Division Multiplexing (OFDM) modulators, each OFDM modulator producing a frame having at least one inserted symbol, a plurality of data symbols, and cyclic prefixes.

64. The accused products include Q transmitting antennas, each transmitting antenna connected to a respective OFDM modulator, the transmitting antennas configured to transmit a respective frame over a channel.

Key Specs

Class Size	60"
Screen Size (Diag.)	60.00" / 1524.00 mm
Smart Platform	VIZIO SmartCast™ with Chromecast built-in
High Dynamic Range	HDR10 & HLG
Resolution	Ultra HD - 3840 x 2160
UHD Upscale Engine	Spatial Scaling Engine™
Display Processor	V8 Octa-Core Processor
Backlight Type	Full Array LED
Built-in Wi-Fi	802.11ac Dual Band

Source: <https://www.vizio.com/d60f3.html>



Source: photo of product



MODEL: DHUR-AZ68

Product Introduction

DHUR-AZ68 is an 802.11 a/b/g/n/ac WLAN/Bluetooth 5.0 combo module with USB interface based on MediaTek MT7668AUN chipset solution.

1-1. Features

- Dual band 2T2R support, IEEE 802.11a/b/g/n/ac + Bluetooth 5.0
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- 2 on-board printed Wi-Fi antennas and 1 BT external antenna
- PCB 4 Layers with 46.5 x 40 x 1.0 mm³

Source: <https://fccid.io/NKR-DHURAZ68/Users-Manual/Users-Manual-3842310>

About this item

- 4K UHD Resolution
- HDR
- Motion Rate 120 AquoDimming™
- UHD Upscaler
- Built-in Apps
- dbx-tv® Award-Winning Audio Technology
- App Store
- 4K Media Player & Receiver
- 2x2 Dual-Band Wi-Fi 802.11ac

Source: https://www.samsclub.com/sams/55-uhd-smart-120hz-3-hdmi-wifi/prod22021839.ip?xid=plp_product_1_1



Source: <https://www.hisense-usa.com/electronics/tv/65h9e-plus>

65. The accused products include a number (L) of receiving antennas for receiving the transmitted frames.

66. The accused products include L OFDM demodulators, each OFDM demodulator corresponding to a respective receiving antenna, the L OFDM demodulators including a synchronization circuit that processes the received frame in order to synchronize the received frame in both time domain and frequency domain, wherein each of the L OFDM demodulators comprises a pre-amplifier, a local oscillator, a mixer having a first input and a second input, the first input connected to an output of the pre-amplifier, the second input connected to an output of the local oscillator, an analog-to-digital converter (ADC) connected to an output of the mixer, the synchronization circuit having one input connected to an output of the ADC, a cyclic-prefix remover connected to an output of the synchronization circuit, a serial-to-parallel converter connected to an output of the cyclic prefix remover, and a discrete Fournier transform (DFT) stage connected to an output of the serial-to-parallel converter, an output of the DFT stage connected to another input to the synchronization circuit.

67. Defendants have had knowledge of the '458 Patent at least as of the date when it was notified of the filing of this action.

68. American Patents has been damaged as a result of the infringing conduct by Defendants alleged above. Thus, Defendants are liable to American Patents in an amount that adequately compensates it for such infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

69. American Patents and/or its predecessors-in-interest have satisfied all statutory obligations required to collect pre-filing damages for the full period allowed by law for infringement of the ‘458 Patent.

COUNT IV

DIRECT INFRINGEMENT OF U.S. PATENT NO. 7,373,655

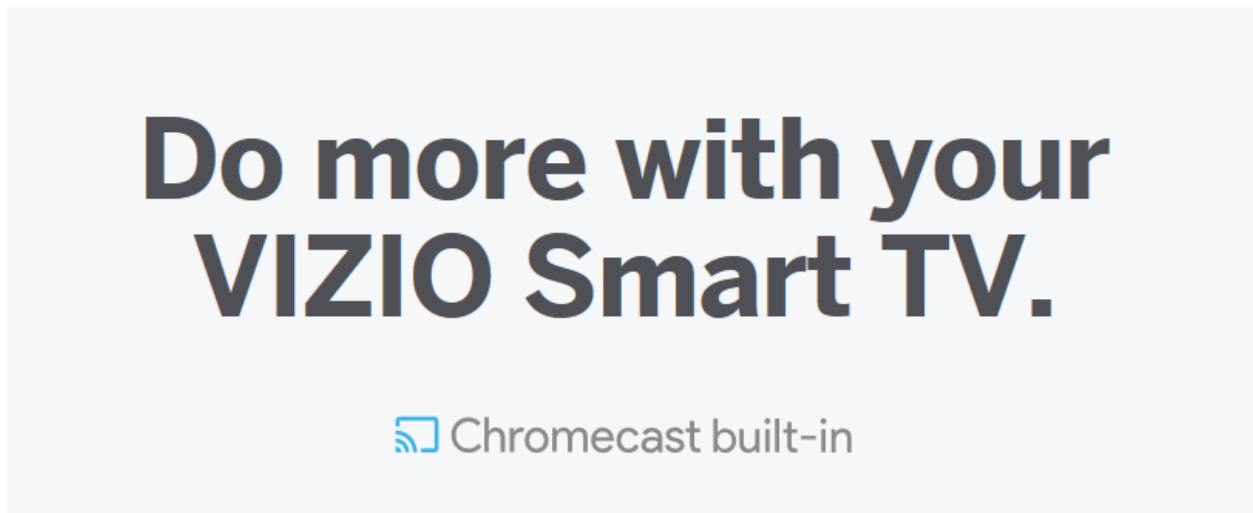
70. On May 13, 2008, United States Patent No. 7,373,655 (“the ‘655 Patent”) was duly and legally issued by the United States Patent and Trademark Office for an invention entitled “System For Securing Inbound And Outbound Data Packet Flow In A Computer Network.”

71. American Patents is the owner of the ‘655 Patent, with all substantive rights in and to that patent, including the sole and exclusive right to prosecute this action and enforce the ‘655 Patent against infringers, and to collect damages for all relevant times.

72. Defendants Best Buy, TPV, and Hisense made, had made, used, imported, provided, supplied, distributed, sold, and/or offered for sale products and/or systems that allow for initiation and/or control of Internet streamed content including, for example, their Vizio brand D-Series or Hisense brand H9E families of products (“accused products”):



Source: <https://www.vizio.com/d-series>



Source: <https://www.vizio.com/d-series>



Source: <https://www.hisense-usa.com/electronics/tv/65h9e-plus>

73. By doing so, Defendants have directly infringed (literally and/or under the doctrine of equivalents) at least Claim 5 of the '655 Patent. Defendants' infringement in this regard is ongoing.

74. Defendants have infringed the '655 Patent by making, having made, using, importing, providing, supplying, distributing, selling or offering for sale systems utilizing a method.

75. The methods practiced by the accused products include arranging a network element in a network, the network element being pre-authorized to access a set of network resources.

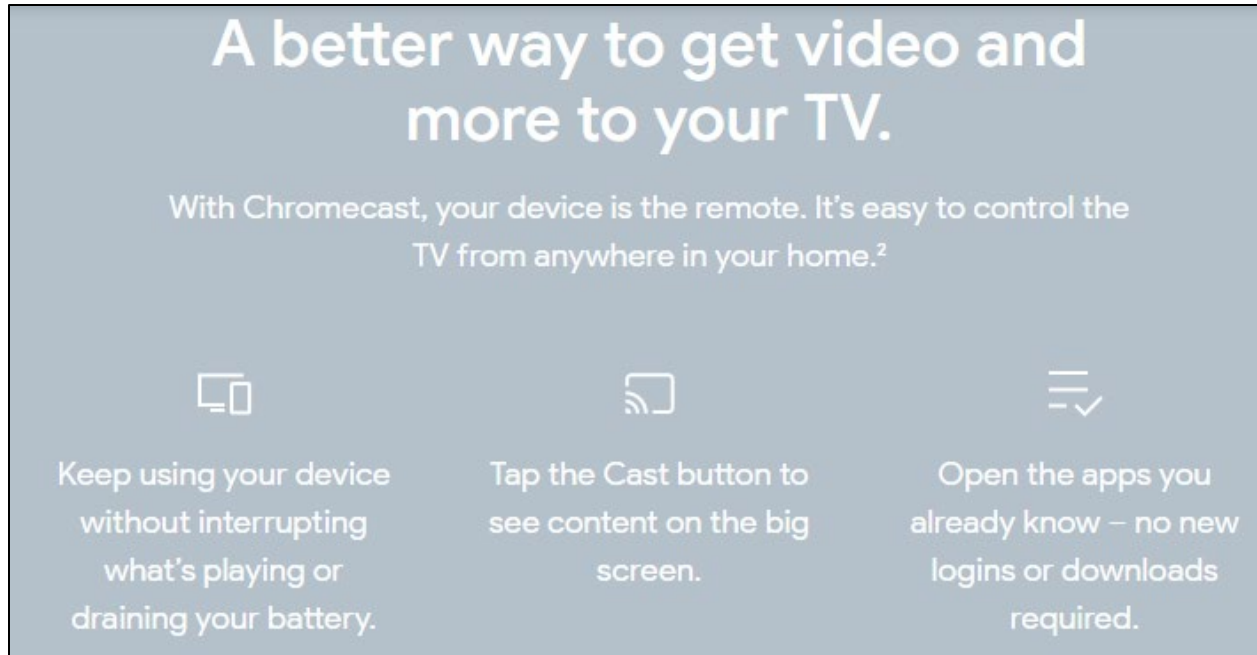
76. The methods practiced by the accused products include receiving, at the network element, a request from a user to connect to the network element.

4. Open the Google Home app by tapping the app icon on your Android device.
5. Tap **Get Started** or find the device card > **Set up**.
6. **Confirm Google Account:** Choose which Google Account that you want to link to Chromecast. You can also add a different account if you don't see the listed account that you want to use. Tap **OK**.
7. **Permissions:**
 - a. **Location services** – If you don't have Location services on, tap **Go to settings** > find the Google Home app > turn on Location services > go back to the Google Home app.
 - b. **Location access** – Location access is needed to find nearby devices that need to be set up Tap **OK**.
8. **Scanning for Chromecast devices:** The Google Home app scans for nearby devices that are plugged in and ready to set up.
 - a. If you only have one device that needs to be set up, tap **Next**.
 - b. If the Google Home app finds a list of devices, tap the device that you want to set up > **Next**.
9. **Found devices:**
 - a. If one device is found, tap **Next**.
 - b. If multiple devices are found, choose the device that you want to set up > **Next**.
 - c. If you don't see your device, tap **Don't see your device**.
10. **Connecting to your new device:** The app will now connect your phone to your new Chromecast so that you can configure it.
11. **Making a connection:** We'll display a code on your TV to make sure that you're setting up the right device.
 - a. If you see a code on your TV, tap **Yes**.
 - b. If you didn't see a code, move closer to the Chromecast device and tap **Try again** > **Scan for devices**.

(Source:

<https://support.google.com/chromecast/answer/2998456?co=GENIE.Platform%3DAndroid&oco=1>)

77. The methods practiced by the accused products include determining whether the user is authorized to connect to the network element and, if so, allowing the user to assume the identity of the network element.



(Source: <https://store.google.com/product/chromecast> 2015)

78. The methods practiced by the accused products include accessing, by the user, one of the set of network resources that the network element is pre-authorized to access, based on the user's assuming the identity of the network element.

79. Defendants have had knowledge of the '655 Patent at least as of the date when it was notified of the filing of this action.

80. American Patents has been damaged as a result of the infringing conduct by Defendants alleged above. Thus, Defendants are liable to American Patents in an amount that adequately compensates it for such infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

81. American Patents and/or its predecessors-in-interest have satisfied all statutory obligations required to collect pre-filing damages for the full period allowed by law for infringement of the '655 Patent.

COUNT V

DIRECT INFRINGEMENT OF U.S. PATENT NO. 7,934,090

82. On April 26, 2011, United States Patent No. 7,934,090 (“the ‘090 Patent”) was duly and legally issued by the United States Patent and Trademark Office for an invention entitled “System For Securing Inbound And Outbound Data Packet Flow In A Computer Network.”

83. American Patents is the owner of the ‘090 Patent, with all substantive rights in and to that patent, including the sole and exclusive right to prosecute this action and enforce the ‘090 Patent against infringers, and to collect damages for all relevant times.

84. Defendants Best Buy, TPV, and Hisense made, had made, used, imported, provided, supplied, distributed, sold, and/or offered for sale products and/or systems that allow for initiation and/or control of Internet streamed content including, for example, their Vizio brand D-Series or Hisense brand H9E families of products (“accused products”):



Source: <https://www.vizio.com/d-series>

Do more with your VIZIO Smart TV.

 Chromecast built-in

Source: <https://www.vizio.com/d-series>



Source: <https://www.hisense-usa.com/electronics/tv/65h9e-plus>

85. By doing so, Defendants have directly infringed (literally and/or under the doctrine of equivalents) at least Claim 1 of the '090 Patent. Defendants' infringement in this regard is ongoing.

86. Defendants have infringed the '090 Patent by making, having made, using, importing, providing, supplying, distributing, selling or offering for sale systems utilizing a method for providing access to a network resource.

87. The methods practiced by the accused products include receiving, at a network node that is pre-authorized to access the network resource, a request to allow a first user to assume an identity of the network node, the network node that is pre-authorized having a plurality of access privileges associated therewith.

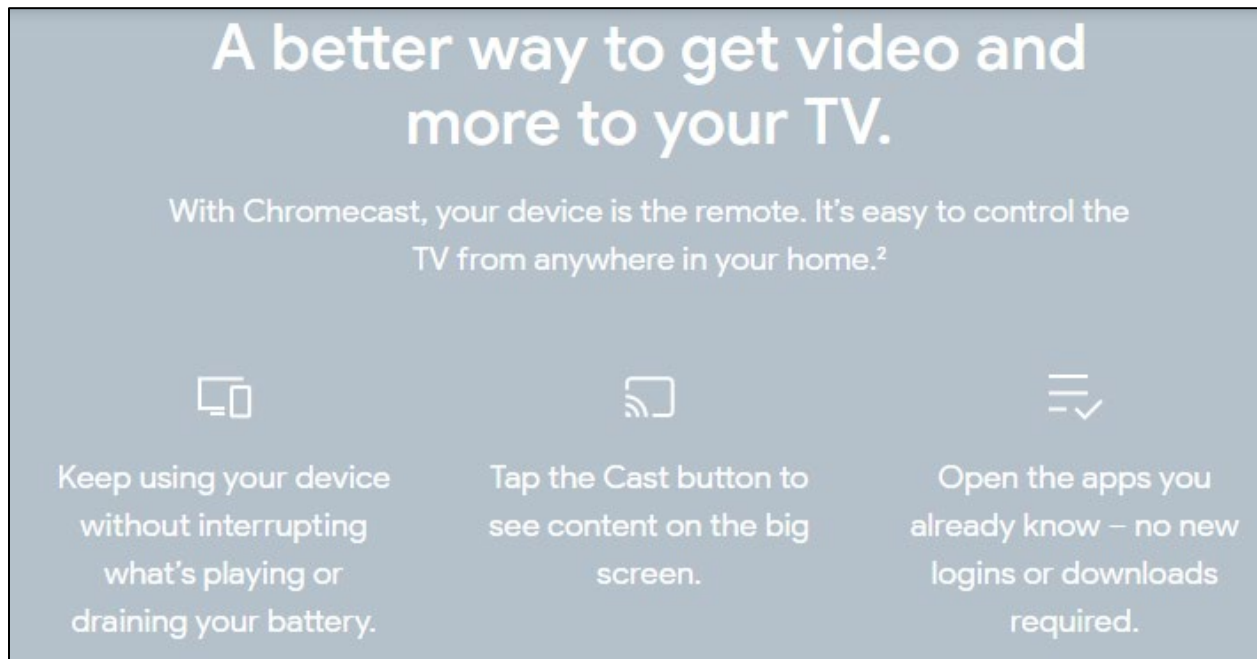
4. Open the Google Home app by tapping the app icon on your Android device.
5. Tap **Get Started** or find the device card > **Set up**.
6. **Confirm Google Account:** Choose which Google Account that you want to link to Chromecast. You can also add a different account if you don't see the listed account that you want to use. Tap **OK**.
7. **Permissions:**
 - a. **Location services** – If you don't have Location services on, tap **Go to settings** > find the Google Home app > turn on Location services > go back to the Google Home app.
 - b. **Location access** – Location access is needed to find nearby devices that need to be set up Tap **OK**.
8. **Scanning for Chromecast devices:** The Google Home app scans for nearby devices that are plugged in and ready to set up.
 - a. If you only have one device that needs to be set up, tap **Next**.
 - b. If the Google Home app finds a list of devices, tap the device that you want to set up > **Next**.
9. **Found devices:**
 - a. If one device is found, tap **Next**.
 - b. If multiple devices are found, choose the device that you want to set up > **Next**.
 - c. If you don't see your device, tap **Don't see your device**.
10. **Connecting to your new device:** The app will now connect your phone to your new Chromecast so that you can configure it.
11. **Making a connection:** We'll display a code on your TV to make sure that you're setting up the right device.
 - a. If you see a code on your TV, tap **Yes**.
 - b. If you didn't see a code, move closer to the Chromecast device and tap **Try again** > **Scan for devices**.

(Source:

<https://support.google.com/chromecast/answer/2998456?co=GENIE.Platform%3DAndroid&oco=1>)

88. The methods practiced by the accused products include allowing the first user to assume the identity of the network node that is pre-authorized, such that the first user appears to

the network resource to be the network node that is pre-authorized, after verifying that the first user is authorized.



(Source: https://store.google.com/product/chromecast_2015)

89. The methods practiced by the accused products include, based on the first user assuming the identity of the network node that is pre-authorized, allowing the first user to access the network resource using the plurality of access privileges associated with the network node that is pre-authorized.

90. Defendants have had knowledge of the '090 Patent at least as of the date when it was notified of the filing of this action.

91. American Patents has been damaged as a result of the infringing conduct by Defendants alleged above. Thus, Defendants are liable to American Patents in an amount that adequately compensates it for such infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

92. American Patents and/or its predecessors-in-interest have satisfied all statutory obligations required to collect pre-filing damages for the full period allowed by law for infringement of the '090 Patent.

ADDITIONAL ALLEGATIONS REGARDING INDIRECT INFRINGEMENT

93. Defendants Best Buy, TPV, and Hisense have also indirectly infringed the '782 Patent, the '304 Patent, the '458 Patent, the '655 Patent, and the '090 Patent by inducing others to directly infringe the '782 Patent, the '304 Patent, the '458 Patent, the '655 Patent, and the '090 Patent. Defendants Best Buy, TPV, and Hisense have induced the end-users, their customers, to directly infringe (literally and/or under the doctrine of equivalents) the '782 Patent, the '304 Patent, the '458 Patent, the '655 Patent, and the '090 Patent by using the accused products. Defendants Best Buy, TPV, and Hisense took active steps, directly and/or through contractual relationships with others, with the specific intent to cause them to use the accused products in a manner that infringes one or more claims of the patents-in-suit, including, for example, Claim 30 of the '782 Patent, Claim 1 of the '304 Patent, Claim 1 of the '458 Patent, Claim 5 of the '655 Patent, and Claim 1 of the '090 Patent. Such steps by Defendants Best Buy, TPV, and Hisense included, among other things, advising or directing customers and end-users to use the accused products in an infringing manner; advertising and promoting the use of the accused products in an infringing manner; and/or distributing instructions that guide users to use the accused products in an infringing manner. Defendants Best Buy, TPV, and Hisense are performing these steps, which constitute induced infringement, with the knowledge of the '782 Patent, the '304 Patent, the '458 Patent, the '655 Patent, and the '090 Patent and with the knowledge that the induced acts constitute infringement. Defendants Best Buy, TPV, and Hisense were and are aware that the normal and customary use of the accused products by their customers would

infringe the '782 Patent, the '304 Patent, the '458 Patent, the '655 Patent, and the '090 Patent. The inducement by Defendants Best Buy, TPV, and Hisense is ongoing.

94. Defendants Best Buy, TPV, and Hisense have also induced their affiliates, or third-party manufacturers, shippers, distributors, retailers, or other persons acting on their or their affiliates' behalf, to directly infringe (literally and/or under the doctrine of equivalents) the '782 Patent, the '304 Patent, the '458 Patent, the '655 Patent, and the '090 Patent by importing, selling or offering to sell the accused products. Defendants Best Buy, TPV, and Hisense took active steps, directly and/or through contractual relationships with others, with the specific intent to cause such persons to import, sell, or offer to sell the accused products in a manner that infringes one or more claims of the patents-in-suit, including, for example, Claim 30 of the '782 Patent, Claim 1 of the '304 Patent, Claim 1 of the '458 Patent, Claim 5 of the '655 Patent, and Claim 1 of the '090 Patent. Such steps by Defendants Best Buy, TPV, and Hisense included, among other things, making or selling the accused products outside of the United States for importation into or sale in the United States, or knowing that such importation or sale would occur; and directing, facilitating, or influencing their affiliates, or third-party manufacturers, shippers, distributors, retailers, or other persons acting on their or their behalf, to import, sell, or offer to sell the accused products in an infringing manner. Defendants Best Buy, TPV, and Hisense performed these steps, which constitute induced infringement, with the knowledge of the '782 Patent, the '304 Patent, the '458 Patent, the '655 Patent, and the '090 Patent and with the knowledge that the induced acts would constitute infringement. Defendants Best Buy, TPV, and Hisense performed such steps in order to profit from the eventual sale of the accused products in the United States. The inducement by Defendants Best Buy, TPV, and Hisense is ongoing.

95. Defendants Best Buy, TPV, and Hisense have also indirectly infringed by contributing to the infringement of the '782 Patent, the '304 Patent, the '458 Patent, the '655 Patent, and the '090 Patent. Defendants Best Buy, TPV, and Hisense have contributed to the direct infringement of the '782 Patent, the '304 Patent, the '458 Patent, the '655 Patent, and the '090 Patent by the end-user of the accused products. The accused products have special features that are specially designed to be used in an infringing way and that have no substantial uses other than ones that infringe the '782 Patent, the '304 Patent, the '458 Patent, the '655 Patent, and the '090 Patent, including, for example, Claim 30 of the '782 Patent, Claim 1 of the '304 Patent, Claim 1 of the '458 Patent, Claim 5 of the '655 Patent, and Claim 1 of the '090 Patent. The special features include improved wireless communication capabilities and initiation and/or control of Internet streamed content in a manner that infringes the '782 Patent, the '304 Patent, the '458 Patent, the '655 Patent, and the '090 Patent. The special features constitute a material part of the invention of one or more of the claims of the '782 Patent, the '304 Patent, the '458 Patent, the '655 Patent, and the '090 Patent and are not staple articles of commerce suitable for substantial non-infringing use. The contributory infringement by Defendants Best Buy, TPV, and Hisense is ongoing.

96. Defendants have also indirectly infringed the '782 Patent, the '304 Patent, and the '458 Patent by inducing others to directly infringe the '782 Patent, the '304 Patent, and the '458 Patent. Defendants have induced the end-users, Defendants' customers, to directly infringe (literally and/or under the doctrine of equivalents) the '782 Patent, the '304 Patent, and the '458 Patent by using the accused products. Defendants took active steps, directly and/or through contractual relationships with others, with the specific intent to cause them to use the accused products in a manner that infringes one or more claims of the patents-in-suit, including, for

example, Claim 30 of the '782 Patent, Claim 1 of the '304 Patent, and Claim 1 of the '458 Patent. Such steps by Defendants included, among other things, advising or directing customers and end-users to use the accused products in an infringing manner; advertising and promoting the use of the accused products in an infringing manner; and/or distributing instructions that guide users to use the accused products in an infringing manner. Defendants are performing these steps, which constitute induced infringement, with the knowledge of the '782 Patent, the '304 Patent, and the '458 Patent and with the knowledge that the induced acts constitute infringement. Defendants were and are aware that the normal and customary use of the accused products by Defendants' customers would infringe the '782 Patent, the '304 Patent, and the '458 Patent. Defendants' inducement is ongoing.

97. Defendants have also induced their affiliates, or third-party manufacturers, shippers, distributors, retailers, or other persons acting on their or their affiliates' behalf, to directly infringe (literally and/or under the doctrine of equivalents) the '782 Patent, the '304 Patent, and the '458 Patent by importing, selling or offering to sell the accused products. Defendants took active steps, directly and/or through contractual relationships with others, with the specific intent to cause such persons to import, sell, or offer to sell the accused products in a manner that infringes one or more claims of the patents-in-suit, including, for example, Claim 30 of the '782 Patent, Claim 1 of the '304 Patent, and Claim 1 of the '458 Patent. Such steps by Defendants included, among other things, making or selling the accused products outside of the United States for importation into or sale in the United States, or knowing that such importation or sale would occur; and directing, facilitating, or influencing their affiliates, or third-party manufacturers, shippers, distributors, retailers, or other persons acting on their or their behalf, to import, sell, or offer to sell the accused products in an infringing manner. Defendants performed

these steps, which constitute induced infringement, with the knowledge of the '782 Patent, the '304 Patent, and the '458 Patent and with the knowledge that the induced acts would constitute infringement. Defendants performed such steps in order to profit from the eventual sale of the accused products in the United States. Defendants' inducement is ongoing.

98. Defendants have also indirectly infringed by contributing to the infringement of the '782 Patent, the '304 Patent, and the '458 Patent. Defendants have contributed to the direct infringement of the '782 Patent, the '304 Patent, and the '458 Patent by the end-user of the accused products. The accused products have special features that are specially designed to be used in an infringing way and that have no substantial uses other than ones that infringe the '782 Patent, the '304 Patent, and the '458 Patent including, for example, Claim 30 of the '782 Patent, Claim 1 of the '304 Patent, and Claim 1 of the '458 Patent. The special features include improved wireless communication capabilities in a manner that infringes the '782 Patent, the '304 Patent, and the '458 Patent. The special features constitute a material part of the invention of one or more of the claims of the '782 Patent, the '304 Patent, and the '458 Patent and are not staple articles of commerce suitable for substantial non-infringing use. Defendants' contributory infringement is ongoing.

99. Furthermore, Defendants have a policy or practice of not reviewing the patents of others (including instructing their employees to not review the patents of others), and thus has been willfully blind of American Patents' patent rights.

100. Defendants' actions are at least objectively reckless as to the risk of infringing valid patents and this objective risk was either known or should have been known by Defendants.

101. The direct and indirect infringement of the '782 Patent, the '304 Patent, the '458 Patent, the '655 Patent, and the '090 Patent by Defendants Best Buy, TPV, and Hisense is, has

been, and continues to be willful, intentional, deliberate, and/or in conscious disregard of American Patents' rights under the patents.

102. Defendants' direct and indirect infringement of the '782 Patent, the '304 Patent, and the '458 Patent is, has been, and continues to be willful, intentional, deliberate, and/or in conscious disregard of American Patents' rights under the patents.

103. American Patents has been damaged as a result of the infringing conduct by Defendants alleged above. Thus, Defendants are liable to American Patents in an amount that adequately compensates it for such infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

JURY DEMAND

American Patents hereby requests a trial by jury on all issues so triable by right.

PRAYER FOR RELIEF

American Patents requests that the Court find in its favor and against Defendants, and that the Court grant American Patents the following relief:

a. Judgment that one or more claims of the '782 Patent, the '304 Patent, the '458 Patent, the '655 Patent, and the '090 Patent have been infringed, either literally and/or under the doctrine of equivalents, by Defendants Best Buy, TPV, and Hisense and/or all others acting in concert therewith;

b. A permanent injunction enjoining Defendants Best Buy, TPV, and Hisense and their officers, directors, agents, servants, affiliates, employees, divisions, branches, subsidiaries, parents, and all others acting in concert therewith from infringement of the '782 Patent, the '304 Patent, the '458 Patent, the '655 Patent, and the '090 Patent; or, in the alternative, an award of a reasonable ongoing royalty for future infringement of the '782 Patent, the '304 Patent, the '458

Patent, the '655 Patent, and the '090 Patent by such entities;

c. Judgment that one or more claims of the '782 Patent, the '304 Patent, and the '458 Patent have been infringed, either literally and/or under the doctrine of equivalents, by Defendants and/or all others acting in concert therewith;

d. A permanent injunction enjoining Defendants and their officers, directors, agents, servants, affiliates, employees, divisions, branches, subsidiaries, parents, and all others acting in concert therewith from infringement of the '782 Patent, the '304 Patent, and the '458 Patent; or, in the alternative, an award of a reasonable ongoing royalty for future infringement of the '782 Patent, the '304 Patent, and the '458 Patent by such entities;

e. Judgment that Defendants account for and pay to American Patents all damages to and costs incurred by American Patents because of Defendants' infringing activities and other conduct complained of herein, including an award of all increased damages to which American Patents is entitled under 35 U.S.C. § 284;

f. That American Patents be granted pre-judgment and post-judgment interest on the damages caused by Defendants' infringing activities and other conduct complained of herein;

g. That this Court declare this an exceptional case and award American Patents its reasonable attorney's fees and costs in accordance with 35 U.S.C. § 285; and

h. That American Patents be granted such other and further relief as the Court may deem just and proper under the circumstances.

Dated: October 26, 2018

Respectfully submitted,

/s/ Zachariah S. Harrington

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